Chapter 3

The following sections address the issues that most affect bikeway facility selection, including aspects of the current and planned physical environment, planned bikeways, land use, bicycle trip origins and destinations, related travel modes and safety issues, including those expressed by citizens through the project's public outreach efforts.

3.1 Circulation

3.1.1 Roadway System

The City of Chula Vista's roadway system is in generally good condition and adequately serves the vehicular and bicycle needs of residents within the developed portions of the City. Even though the City's topography is quite different between the east and west, bicycle facilities tend to occur where population and housing densities are highest and bicycle facilities are generally accessible to the majority of residents.

The relatively flat terrain in the western portion of Chula Vista drove the development of a traditional historic grid street pattern that allows numerous access points to any given major street. This arrangement tends to disperse traffic. These streets also tend to be narrow by conventional standards and have more intersections, but they also have lower posted speed limits.

In the eastern portion of the City, the location of arterials supporting bicycle facilities was driven by the topography. They tend to follow east-west ridge lines or valleys as they connect major housing and population concentrations that developed along these roadways.

In plan view, the associated side streets spread out in a relatively amorphous form often seen in conventional suburban roadway system on either sides of these arterials, but the street layout was truly defined by the hilly topography. The number of access points to major streets is therefore reduced, which tends to focus traffic and bicycle facilities on fewer, but wider roadways with higher posted speed limits than seen in traditional grid street development like western Chula Vista. The local topography also tends to limit the number of major north-south routes through the eastern portion of the City.

3.1.2 Programmed Roadways

Programmed arterials in Chula Vista are within the eastern portion of the City, such as the extensions of Main Street/Otay Valley Road eastward and in the vicinity of the La Media Road corridor southward into the City of San Diego. Chula Vista's roadway system is not complete since the City is not yet built out. This accounts for areas in the southeastern portion of the City not yet accessible by paved roadway.

3.1.3 City Bikeway Standards

Like most municipalities, the City of Chula Vista determines bikeway facility installations on a project-specific basis. All streets designated as Class II collectors or larger are required to provide a "parking or bike lane." The actual use of this lane is defined by factors such as whether the roadway is included in the current bikeway master plan, in which case City policy requires the provision of an additional 10 feet of right-of-way.

In general, major streets in the more recently developed areas east of I-805 have been required to include bicycle facilities. Class 2 facilities are the norm, but Class 1 facilities can be considered in areas where the roadway width to accommodate Class 2 lanes is not available and where adjacent land can be provided by developers for a parallel Class 1 facility separate from the roadway. Even so, this substitution is likely to be employed on a very limited basis only as needed.

Where bicycle facilities are desired on roadways with issues such as congestion, high motor vehicle volumes or numerous curb cuts that would make it difficult to provide adequate bicycle facilities, the City of Chula Vista has designated Class 3 bicycle facilities on alternate parallel roadways. This is an reasonable strategy if the alternate parallel route does not take cyclists too far out of their way, such as by designating a parallel street a block over from the congested roadway, which has been done in the downtown area. However, in eastern Chula Vista, the topography-driven roadway layout will make designating alternate parallel routes difficult.

3.1.4 Existing Bikeway Facilities

There are three bikeway facility types within the City of Chula Vista. Though some existing wide sidewalks may have been noted in previous mapping as Class 1 paths, they do not meet Caltrans Class 1 criteria for width, obstructions or offset from adjacent roadways. Virtually all arterial roadways east of I-805 have Class 2 facilities. There is also a significant amount of Class 3 bikeway facilities, primarily within the western portion of the City west of I-805. (See Figure 1: Existing Bicycle Facilities in Chapter 1 and following tables.)

Table 1

Existing Class 1 Bike Paths

Segment	Miles	Limits	Notes
Gordy Shields Bike Path	0.72	City limits to E Street	Connects Bayshore and Sweetwater Bike Paths
Hilltop Drive Bike Path	0.38	First Avenue to Hilltop Drive	Travels within easement park. Needs signs and pavement markings
East Palomar Bike Path	2.33	Heritage Road to Magdalena Avenue east along Palomar Street	Includes two bike bridges over La Media Road and Olympic Parkway. Rough pavement markings chipping away in some areas
Sweetwater Bike Path	0.69	City limits to North Second Avenue	Only bike path connection from this path to City is on North Second Avenue
Telegraph Canyon Road Bike Path	0.60	East of Hilltop Middle School to Nacion Avenue along Telegraph Canyon Road	Meets requirements, but needs resurfacing and signage. Connects to Hilltop Middle School
Wueste Road Bike Path	1.26	Olympic Parkway to end of Olympic Training Center	Connects to Mountain Hawk Park
Willow Street Bike Path	0.25	Bonita Road to City limits	Along west edge of Chula Vista Golf Course
Total Mileage:	**6.23**		

Table 2

Existing Class 2 Bike Lanes			
Roadway Segment	**Miles**	**Limits**	**Notes**
Third Avenue	0.23	Anita Street to Orange Avenue	Bike lanes northbound only
Avenida Del Rey	0.30	Rancho Del Rey Parkway to Otay Lakes Road	
Bay Boulevard	2.60	E Street to Palomar Street	
Birch Road	1.29	La Media Road to Eastlake Parkway	Bike lanes through SR-125
Bonita Road	1.22	E Street to City limits	Bike lanes continue beneath I-805. Two separate segments. Middle segment within County of San Diego.
Brandywine Avenue	1.40	East Palomar Street to Main Street	Split at East Palomar Street
Buena Vista Way	0.37	Rancho Del Rey Parkway to East H Street	
C Street	0.49	Broadway to Fourth Avenue	
Clubhouse Drive	1.21	Eastlake Parkway to North and South Creekside Drive	
Corral Canyon Road	1.10	City limit to East H Street	
Del Rey Boulevard	0.29	East H Street to Rancho Del Rey Parkway	
East H Street	4.76	I-805 to Mt Miguel Road	Missing bike lanes just east of Bonita Vista High School approximately 1/4 mile and between Regulo Place and Buena Vista Way
East J Street	1.41	Floyd Avenue to Via Miraleste	Missing bike lanes between River Ash Drive and Paseo Ranchero
East Orange Avenue	1.42	Hilltop Drive to Brandywine Avenue	
East Palomar Street	2.42	Nolan Avenue to Magdalena Avenue	Class 3 between Pecan Place and Oleander Avenue. Continues with bike path/cycle track on East Palomar Street to Santa Rosa Drive
Eastlake Drive	0.85	Hillside Drive to Lakeshore Drive	
Eastlake Parkway	2.69	Lakeshore Drive to Hunte Parkway	
Entertainment Center	0.28	Entertainment Circle to Heritage Road	Accesses Knotts Soak City and Cricket Amphitheater
G Street	0.08	Sandpiper Way to Lagoon Drive	Part of interim Bayshore Bikeway alignment, ultimately to be bike path. Interim alignment in Chula Vista is bike lanes
Heritage Road	0.70	Telegraph Canyon Road to Olympic Parkway	
Hilltop Drive	0.22	J Street to Telegraph Canyon Road	Short segment west of Hilltop Middle School
Hunte Parkway	4.37	Eastlake Parkway to cul-de-sac at Salt Creek Golf Club	
Industrial Boulevard	0.14	Palomar Street to Ada Street	Runs along trolley line
King Creek Way	0.11	Hunte Parkway to North Creekside Drive/Noble Canyon Road	
La Media Road	2.31	Otay Lakes Road to Santa Luna Street	
Lagoon Drive	0.32	G Street to Bay Boulevard	Part of interim Bayshore Bikeway alignment
Lakeshore Drive	1.22	Eastlake Drive to Eastlake Parkway	Loop around a lake
Lane Avenue	0.86	Proctor Valley Road to Otay Lakes Road	
Main Street	1.67	Main Court to Heritage Road Bridge	
Marina Parkway	0.66	Sandpiper Way to Bay Boulevard	Part of interim Bayshore Bikeway alignment. Bike lanes narrow to 2 feet wide eastbound near Bay Boulevard. Westbound bike lanes meet requirements.

Table 2 (Continued)

Existing Class 2 Bike Lanes			
Roadway Segment	**Miles**	**Limits**	**Notes**
Marina Parkway	0.28	Lagoon Drive to G Street	Part of interim Bayshore Bikeway alignment. Bike lanes too narrow and very poor road conditions
Medical Center Drive	0.75	Telegraph Canyon Road to East Palomar Street	
Mt Miguel Road	1.47	SR-125 to Mackenzie Creek Road	
North Greensview Drive	0.98	Clubhouse Drive to Hunte Parkway	
North Rancho Del Rey Parkway	1.89	Del Rey Boulevard to Buena Vista Way	
Northwoods Drive	0.15	Woods Drive to Proctor Valley Road	
Oak Springs Drive	0.12	Hunte Parkway to Silver Springs Drive	
Olympic Parkway	6.18	Lake Crest Drive to Olenader Avenue	
Olympic Vista Road	0.45	Olympic Parkway to Lake Crest Drive	
Orange Avenue	1.56	Palomar Street to Hilltop Drive	
Otay Lakes Road	6.07	Bonita Road to eastern City limits	Missing bike lanes from Rutgers Avenue to approx 800 feet east. Class 3 bike route in front of Southwestern College before continuing bike lanes to Bonita Road
Palomar Street	0.14	Walnut Avenue to Industrial Boulevard	
Paseo Del Rey	0.28	Telegraph Canyon Road to East H Street	
Paseo Ladera	1.31	East J Street to De La Toba Road	
Paseo Ranchero	1.11	Rancho Del Rey Parkway to Olympic Parkway	
Proctor Valley Road	1.80	Mt Miguel Road to Northwoods Drive	
Proctor Valley Road	0.54	City limit to Mt Miguel Road	Near Liberty Elementary School
Rutgers Avenue	0.60	East H Street to Otay Lakes Road	
South Greensview Road	1.33	Clubhouse Drive to Hunte Parkway	
South Rancho Del Rey Parkway	1.62	Del Rey Boulevard to Buena Vista Way	
San Miguel Ranch Road	0.72	City limit to SR-125	Bike lanes signs exist but striping does not from Proctor Valley Road to SR-125
Sandpiper Way	0.43	G Street to Marina Parkway	Part of interim Bayshore Bikeway alignment
Santa Luna Street	0.35	La Media Road to Magdalena Avenue	
Santa Venetia Street	0.12	La Media Road to Windchime Drive	
Stella Street	0.14	Bay Boulevard to West Frontage Road	
Stone Gate Street	0.09	Yosemite Drive to Hunte Parkway	
Sweetwater Road	0.20	City limit lines	
Telegraph Canyon Road	3.47	Halecrest Drive to Otay Lakes Road	
Telegraph Canyon Road	0.88	Hilltop Drive to East L Street	
Terra Nova Drive	0.89	East H Street to South Rancho Del Rey Parkway	
West Frontage Road	0.47	Stella Street to Main Street	Narrow bike lanes and cars parked in bike lanes
Total Mileage:	**73.38**		

Table 3

Existing Class 3 Bike Routes			
Roadway Segment	**Miles**	**Limits**	**Notes**
First Avenue	0.19	F Street to Bonita Road	
Second Avenue	2.57	City limits to L Street	
Third Avenue	1.11	Naples Street to Orange Avenue	No bike route sign south of Palomar Street on northbound lanes only
Fourth Avenue	4.38	City limit to Beyer Way	Accesses Chula Vista High School
Beyer Way	0.15	Third Avenue to City limit	
Bonita Road	0.54	First Street to Bonita Glen Drive	
East 30th Street	0.16	L Avenue to North Second Avenue	
East H Street	0.39	Hilltop Drive to Carvalos Drive	Accesses Hilltop High School
East J Street	2.35	Hilltop Drive to cul-de-sac	Bridge over I-805 without an interchange. Existing bike lanes between Floyd Avenue and River Ash Drive and between Paseo Ranchero and Via Miraleste. Connects with bike lanes
East Naples Street	1.84	Hilltop Drive to Medical Center Drive	Bridge over I-805 without an interchange
East Orange Avenue	0.12	Over I-805	
East Palomar Street	1.11	Pecan Place to Oletoer Drive	Bridge over I-805 without an interchange
F Street	1.94	Bay Boulevard to Hilltop Drive	
Gotham Street	0.64	Otay Lakes Road to Rutgers Avenue	Accesses Southwestern College
H Street	1.00	Fourth Avenue to Hilltop Drive	
Hilltop Drive	3.38	F Street to Main Street	Existing bike lanes between J Street and Telegraph Canyon Road. Accesses Castle Park High School and Hilltop Middle School
Industrial Boulevard	1.33	L Street to Main Street	Existing bike lanes between Palomar Street and Ada Street
J Street	1.99	Bay Boulevard to Hilltop Drive	Central east-west connection
Magdalena Avenue	1.55	East Palomar Street to Rock Mountain Road	Accesses Olympian High School
Main Street	2.90	Industrial Boulevard to Main Court	40 mph speed limit with very little buffer between parked cars and fast moving vehicles
North Second Avenue	0.17	Sweetwater Road to City limits	Connects to Sweetwater Bike Path
North Fourth Avenue	0.26	Beyer Way to City limit	
Naples Street	1.00	Fourth Avenue to Hilltop Drive	
Otay Lakes Road	0.27	Elmhurst Street to Miracosta Circle/Apache Drive	Accesses Southwestern College
Palomar Street	1.91	Industrial Boulevard to Hilltop Drive	Section between Pecan Place and Nolan Avenue is bike lane
Paseo Del Rey	0.52	Telegraph Canyon Road to East H Street	

Total Mileage: **33.80**

Note: One result of field work was the compilation of a series of potential improvements to existing facilities that would likely not otherwise be directly affected by this bikeway master plan update. These recommended improvements are included in Appendix H: Existing Facility Improvement Recommendations.

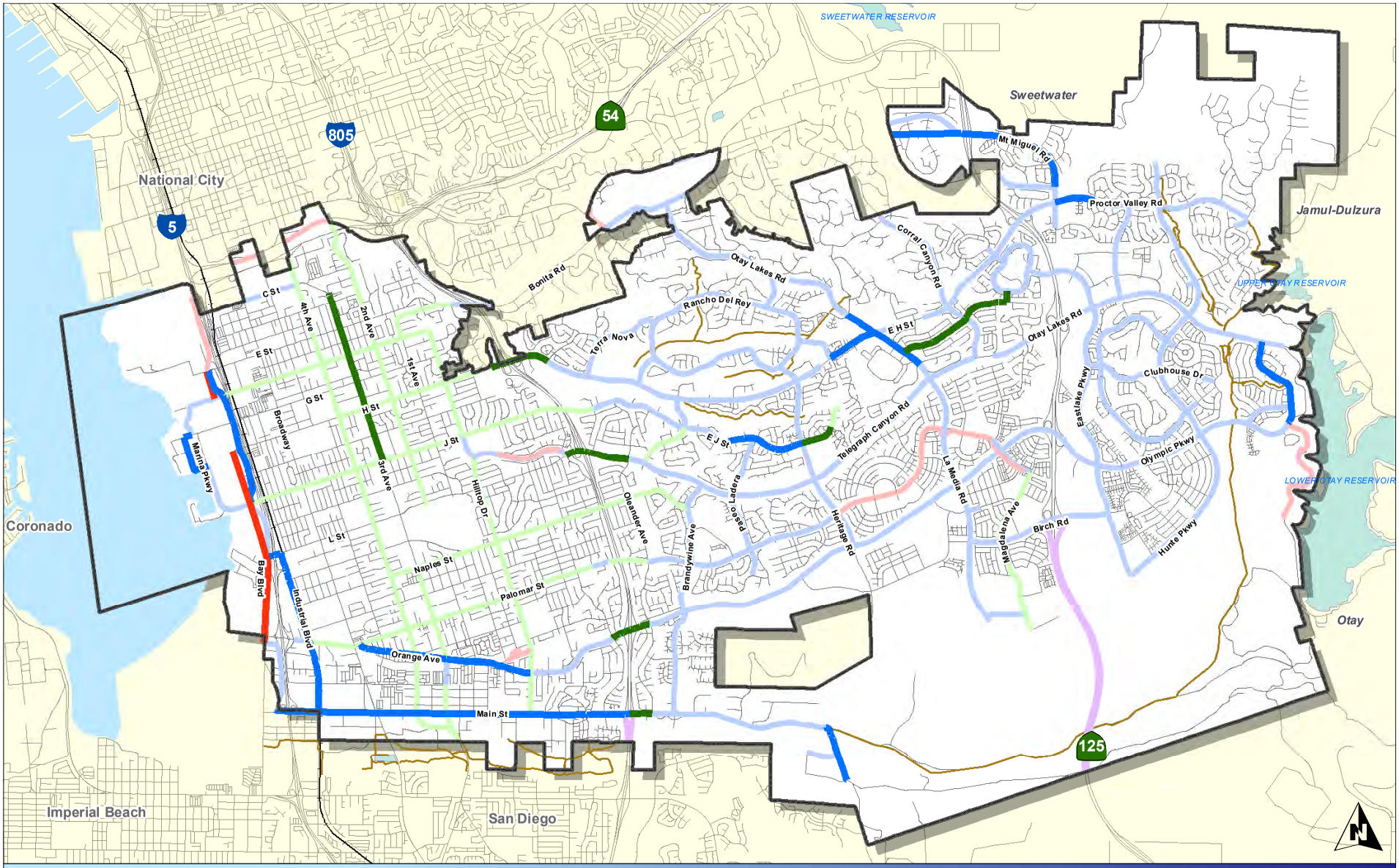


Figure 2: Planned Bicycle Facilities

City of Chula Vista
Trails
Railroad
Lakes

Existing Bicycle Facilities*
Class1: Bike Path
Class 2: Bike Lanes
Class 3: Bike Route
Freeway Shoulder

Proposed Bicycle Facilities (2005 BMP)**
Class1: Bike Path
Class 2: Bike Lanes
Class 3: Bike Route

** Source: KTU+A 2010*
*** Source: 2005 Chula Vista Bicycle Master Plan and CIPs*

3.1.5 Planned Bikeway Facilities

City of Chula Vista policy is to include Class 2 bike lanes when constructing new arterial streets. Therefore, the remaining programmed roadways in the eastern portion of Chula Vista will likely be built with Class 2 bike lanes. (See Figure 2: Planned Bicycle Facilities.)

3.2 Trip Origins

Most of the population statistics used to perform this trip origin analysis were derived from regional demographic data obtained from the U.S. Census Bureau. SANDAG provided much of the land use data needed to produce the maps for this chapter, including the most recent 2030 projections. Additional information came from aerial photography. These data sources were used primarily for defining and evaluating existing and proposed housing and employment densities and trends, land use trend analysis and, from these, determining potential trip origins.

In the context of a bikeway master plan analysis, "trip origins" are defined as those areas or specific locations from which the majority of bicycle usage is likely to come. Determining where these trip origins are now or will be in the future is important in guiding the design and implementation of a cost-effective bikeway facility system that will maintain its usefulness over time. This includes tracking projected changes in land use, population and housing density, but defining the trip origins for a particular city is usually not so straightforward.

Extracting useful information from some of the data described in the following sections sometimes required evaluating data from other sources and synthesizing the results. Other sources of information were reviewed based on well known principles employed in most bikeway master plan projects. For instance, residential areas are, in general, trip origin points. In all cases, the primary information sought was how and where changes are projected to occur in Chula Vista in the near future.

In terms of bikeway facility planning, significant concentrations of housing or employment can better support the costs of bicycle facilities because potential users are clustered. Higher housing or employment densities tend to be the most cost-effective situations for bicycle facilities because they provide the most potential users for a given area.

3.2.1 Existing Land Use

Existing land use in Chula Vista varies considerably between western Chula Vista (west of I-805) and eastern Chula Vista (east of I-805). Western Chula Vista has a conventional urban street grid pattern and consists primarily of moderate to high density residential development, with pockets of commercial, industrial and public facilities. Concentrations of commercial, office and higher density residential land uses occur along the major north-south thoroughfares.

Eastern Chula Vista, like the western portion of the City, consists primarily of single-family residential, with concentrations of higher densities near major thoroughfares. The primary distinction between the two portions of the City is that eastern Chula Vista consists of several large master planned communities with curvilinear, suburban configurations, rather than grid streets. There are also more active and passive open space areas, more public facilities and a growing number of activity centers. In addition, there are thousands of acres of former ranch land on the verge of development. (See Figure 3: Existing Land Use.)

3.2.2 Future Land Use

A trend that commonly occurs as a city matures is that undeveloped areas do not remain undeveloped. In Chula Vista, there are plans for most of the undeveloped land, primarily for low density residential, mixed use, education, industrial and park land uses. This trend is particularly noticeable along the SR-125 corridor. In addition, the existing open space will expand as fingers into the planned land uses across the southeast portion of the City. Open space will significantly increase as buffers around individual residential neighborhoods connecting with the existing large areas along the southern and eastern City limits. (See Figure 4: Planned Land Use.)

The resulting development pattern in these areas resembles the areas immediately east of I-805, but some of the new neighborhoods will differ from the existing residential areas in having cores of mixed use and moderate residential density, rather than low density residential with strips of other uses along the arterial roadways only.

The land use changes noted above indicate a trend toward more concentrated development in general, and more housing in particular, in the eastern portion of the City. This will tend to create new demands for bicycle facilities where less concentrated land uses had existed before. Among the new more concentrated land uses is the proposed university in southeastern Chula Vista and associated mixed use land use along the adjacent SR-125 corridor.

This SR-125 corridor will become eastern Chula Vista's primary employment and commercial center. Its importance in terms of bicycle planning is based on its centrally located position within the eastern section of the City as a major bicycle commuting destination point. The demand for bicycle facilities can be expected to grow with increases in employment density, especially for amenities favored by commuters, such as secure bicycle parking and showers and locker facilities at their destination points.

Overall, housing and employment will continue to be dispersed across the City as they are now, retaining commercial concentrations along major thoroughfares. However, eastern Chula Vista will have more areas of mixed use that imply a greater mix of housing, services and consumer outlets. Land use changes in western Chula Vista are not expected to be as significant, but some moderate density residential area expansion along major thoroughfares is indicated in the future land use data bases, as well as a notable increase in mixed use development.

3.2.3 Residential Areas

Residential land uses are, by far, the most common origin points for bicycle trips within a community, followed by bicycle trips originating in the residential areas of adjacent communities. Analyzing census housing density data is the primary method to determine what areas of a city will be most likely to generate bicycle trips. Logically, the higher the housing density, the more bicycle trips will be generated.

The bicycling trips originating in residential areas typically terminate at schools and employment centers, retail and entertainment centers, parks and open space, as well as at other residential areas. For this reason, the sizes, densities and locations of residential developments and their relationships to other land uses such as schools, employment centers and parks and open space are crucially important to bikeway facility planning.

Most bicycle trips are likely to be for transportation (commuting to work or school), recreation and exercise purposes. These categories were very evenly distributed in questionnaire results. All use categories are likely to occur throughout the City, but recreational riding may occur more in the coastal portion of Chula Vista, while riding for exercise is more likely to occur in the eastern portion of the City where streets are wider, have fewer cross streets, but often have steeper grades. Commuter riding may occur anywhere, but commuters are more likely to be seen on the more direct routes utilizing major streets and arterials.

Based on the planned land use data, the City of Chula Vista will be built out within two decades and the development to come in eastern Chula Vista will be primarily low density residential with some multiple family and mixed use.

3.2.4 Population and Employment Density

The highest population densities occur in “downtown” Chula Vista, near the city “center” in the west central portion of the City. A few small areas of moderate population density occur in eastern Chula Vista associated with areas of moderate density embedded within large areas of low densities. (See Figures 5 and 6: 2000 Population Density and Employment Density.)

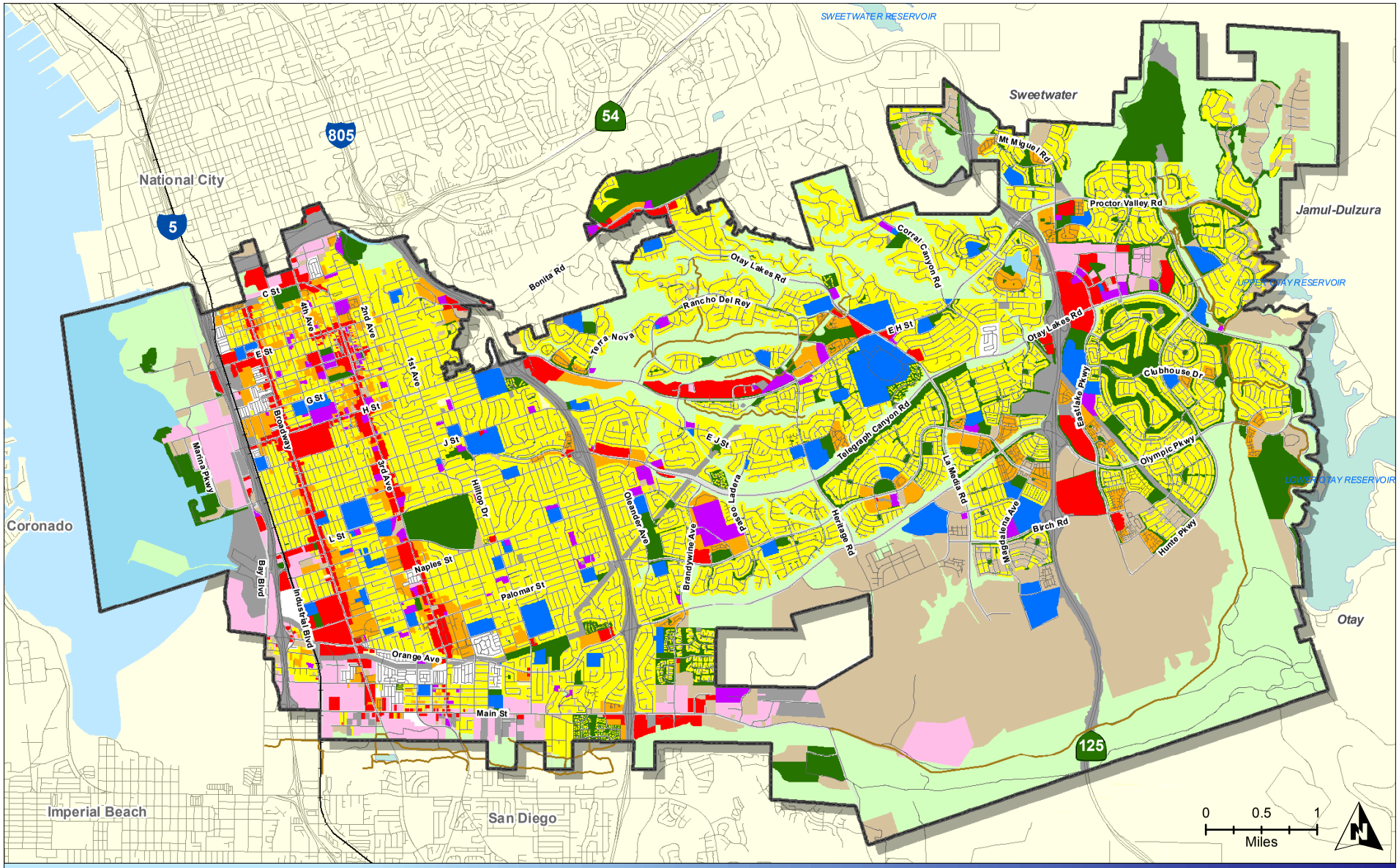


Figure 3: Existing Land Use

City of Chula Vista
Trails
Railroad
Lakes

Existing Land Use*

Residential
- Spaced Rural Residential
- Single Family Residential
- Multiple Family
- Mobile Homes

Commercial and Office
- Commercial

Industrial
- Industrial

Public Facilities and Utilities
- Transportation and Utilities
- Education
- Institutions
- Military

Parks and Recreation
- Parks
- Open Space

Undeveloped
- Undeveloped
- Water Bodies
- Rights of Way

** Source: SANDAG 2009*

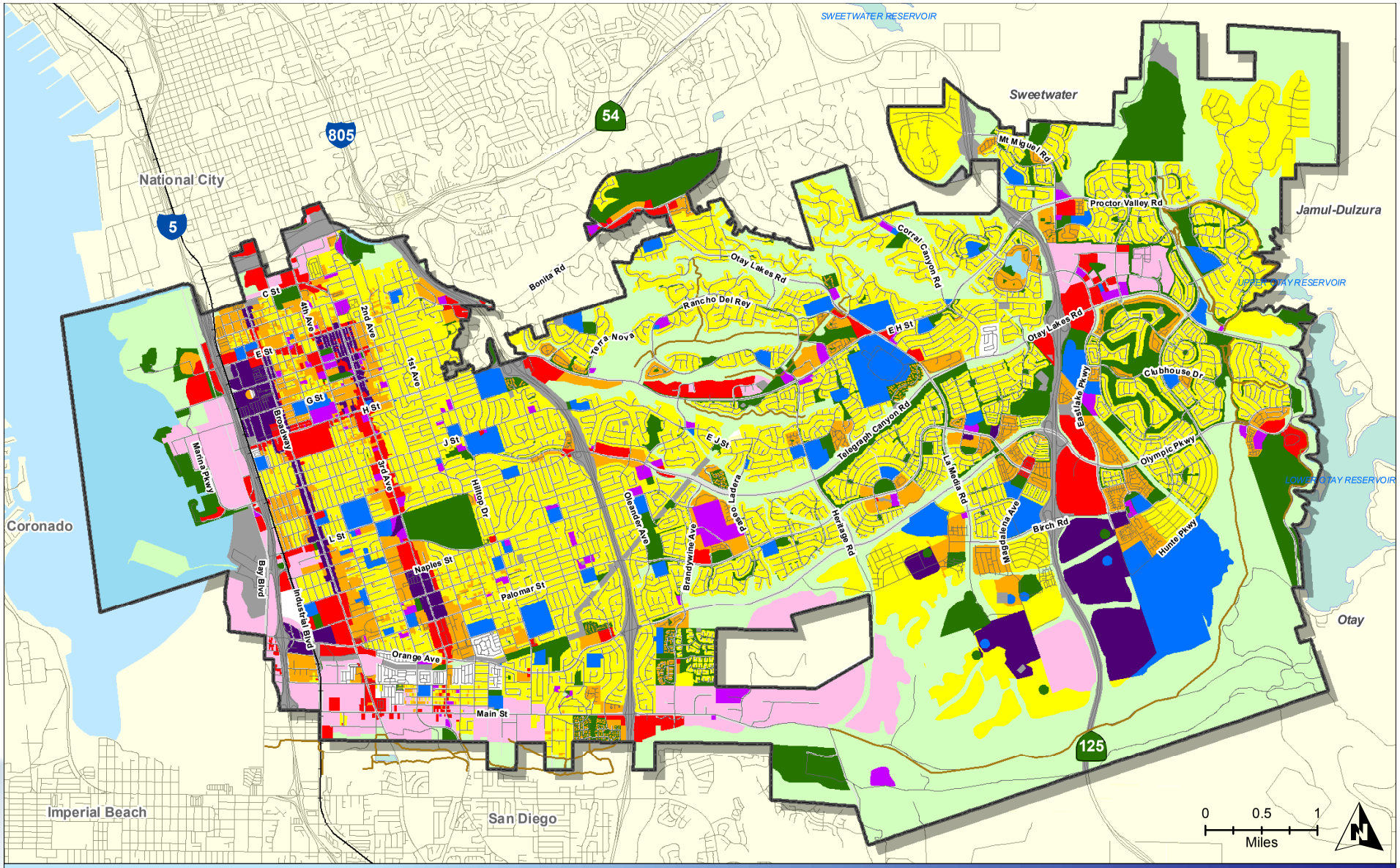


Figure 4: Planned Land Use

City of Chula Vista
Trails
Railroad
Lakes

Planned Land Use*

Residential
- Spaced Rural Residential
- Single Family Residential
- Multiple Family
- Mobile Homes

Commercial and Office
- Commercial
- Mixed Use

Industrial
- Industrial

Public Facilities and Utilities
- Transportation and Utilities
- Education
- Institutions
- Military

Parks and Recreation
- Parks
- Open Space

Undeveloped
- Undeveloped
- Water Bodies
- Rights of Way

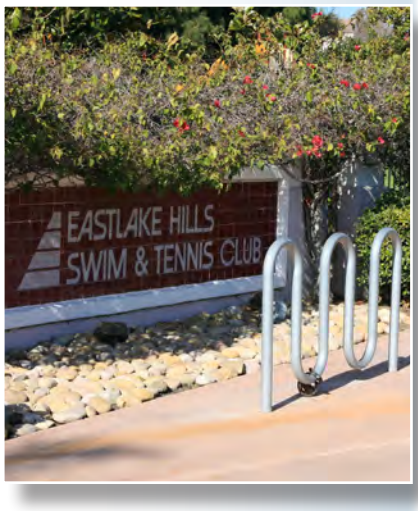
** Source: SANDAG 2009*

According to planned land use data, population densities in Chula Vista will moderately increase. Some areas of eastern Chula Vista not currently shown as populated will be developed into low and moderate density housing. The City of Chula Vista is also planning for higher density residential development in an "Eastern Urban Center" bounded by SR-125 and Birch Road. More than 2,000 housing units with densities of up to 35 units per acre are planned for this development, which will also feature a transit hub.

3.2.5 Summary of Trip Origins

Based on the foregoing analysis of housing density, population density and land use, most future bicycle activity is likely to originate from within the residential areas. These areas will become large enough in terms of population density and physical size to generate some bicycle traffic that originates and terminates within them, as well as supplying users for the city-wide bicycle system. Questionnaire results also indicated that a substantial number of commuting cyclists currently come from neighboring communities. As employment densities increase, especially along the SR-125 corridor, the number of commuting cyclists from neighboring communities can also be expected to grow as well. The planned development of a university campus in this area is likely to generate significant numbers of commuting cyclists.

Redevelopment and land use intensification in western Chula Vista will occur over time and may create more congested areas that could become less hospitable for cyclists. Actual intensification will be gradual, but these redevelopment areas may create relatively immediate impacts in the form of a more "urban" traffic pattern. This is likely to be most problematic where areas of intensification occur along the roadways already designated as Class 3 routes. However, one of the expected benefits of combining increased residential density and mixed use development is some reduction in local motor vehicle trips. This will have a positive effect on the area's overall impression for bicycle transportation that, in turn, is likely to encourage further increases in bicycle use for local trips.



3.3 Trip Destinations

Trip destination points in terms of bikeway facility planning are generally referred to as a community's "activity" centers. In the context of a bicycle master plan analysis, the term "activity" specifically refers to bicycling usage generated as a result of the particular trip destination. A list of a community's activity centers can include its schools, parks, open spaces, athletic facilities, libraries, community centers, retail complexes and employment centers. The types and locations of these activity centers within a community reflect the amount and types of bicycle usage they can be expected to generate. This is especially true in terms of their proximity to residential areas.